

29. A method of monitoring the integrity of a structure disposed in an environment containing a fluid at an ambient pressure, said method including the steps of:
providing a source of a first fluid at a first pressure greater than said second pressure;
placing said source in fluid communication with one or more cavities provided on or in said structure; and
monitoring for a change in a steady state rate of inflow of said first fluid into said one or more cavities.

30. The method according to claim 29 wherein said step of placing said source in fluid communication with one or more cavities provided on or in said structure includes forming said one or more cavities on or in said structure.

31. The method according to claim 30 wherein said step of forming said one or more cavities includes forming a recess or depression in or on said structure and forming a seal across said recess or depression.

32. The method according to claim 30 wherein said step of forming said one or more cavities includes constructing said structure as an ensemble of two or more components which are coupled together, said components juxtaposed relative to each other in a manner so that a surface of one component is adjacent to a surface of at least one other of said components to form respective adjacent surface pairs, and forming said one or more cavities between one or more of said adjacent surface pairs.

33. The method according to claim 32 further including the step of placing alternate ones of said cavities in fluid communication with said ambient pressure to produce adjacent interspersed source pressure cavities and ambient pressure cavities.

34. The method according to claim 33 further including the step of placing a moisture trap in series connection between said ambient pressure cavities and said environment or a source of said ambient pressure.

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35. The method according to claim 32 wherein, said monitoring step includes coupling a high fluid flow impedance in series between said source pressure cavities and said source, to create a steady state differential pressure between said source pressure cavities and said source, and monitoring for a change in said steady state differential pressure.

36. The method according to claim 32 wherein, said monitoring step includes providing a supply of a fluid marker in fluid communication with said first fluid source and monitoring said structure for traces of said fluid marker.

37. The method according to claim 32 wherein, when said components of said structure, are coupled together by a layer of adhesive, or incorporate a layer of sealing material between said adjacent surface pairs, said forming step includes forming said cavities in said adhesive or sealing layer.

38. The method according to claim 32 wherein, where said components are coupled together by mechanical fasteners, said forming step includes providing a seal about said adjacent pairs to form said cavities between said adjacent surface pairs.